

Remarks

Prior to entry of this Response and Amendment, claims 1-29 are pending and under consideration in the present application. Claims 1-29 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 6,649,316 (Baker et al.) in view of U.S. Patent No. 5,886,067 (Li et al.).

In this Response and Amendment, claims 14-15 have been cancelled, claims 12-13, 22-23, 25 and 27 have been amended, and new claims 30 and 31 have been added. No new matter has been added by the present amendments. Applicants respectfully request entry of the enclosed amendments. Upon entry of the present amendments, claims 1-13 and 16-31 will be pending.

Claim Rejections

Claims 1-29 have been rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1-17 of U.S. Patent No. 6,649,316 in view of Li et al. (5,886,067). Applicants respectfully disagree and request reconsideration.

The present claims relate to liquid electrophotographic toner compositions having toner particles dispersed in a liquid carrier having a Kauri-Butanol number less than 30 ml. The toner particles are composed of a polymeric binder comprising at least one amphipathic copolymer comprising one or more S material portions and one or more D material portions. The designation of S material portions and D material portions relate to the respective solubilities of these portions of the copolymer in the liquid carrier - the S material portions tend to be more solvated in the carrier while the D material portions tend to be more dispersed in the carrier. As recited in the claims, one or more of the D material portions comprises one or more polymerizable, crystallizable compounds.

Baker et al. (6,649,316, hereafter the "Baker patent") was discussed in detail in the Response filed May 5, 2005. As discussed in that prior Response, there are fundamental differences between the toner compositions described in the Baker patent and the toner compositions that are the subject of the present claims.

As discussed in the prior Response, the Baker patent describes a toner that is solid under storage conditions. The Office Action incorrectly states that "Both applicants and Baker et al

teach the phase change developer...”. However, the claims pending in this application recite a liquid electrophotographic toner composition. Unlike the “phase change developer” compositions described in the Baker patent, the toner compositions of the claims are not present as one physical phase under storage conditions (e.g., as a solid) and transition into another phase during development (See column 2, lines 21-25 of the Baker patent). The Baker ‘316 patent does not teach or suggest a liquid toner as presently claimed.

Additionally, the Baker patent does not teach or suggest at least the following: inclusion of a polymerizable, crystallizable compound in the D material portion (claims 1, 17, 23, 25), or an amphipathic copolymer having a D material portion with a glass transition temperature greater than 55°C (claims 12, 22, 27), or in the range of 30°C to 50°C (claim 16) as presently claimed.

The newly cited Li et al. patent (5,886,067, hereafter the “Li ‘067 patent”) does not cure the deficiencies of the Baker patent. The Li ‘067 patent describes liquid ink compositions comprising an organosol comprising a (co)polymeric steric stabilizer covalently bonded to a thermoplastic co(polymeric) core that is insoluble in the carrier liquid (column 3, line 66 through column 4, line 5, and column 6, lines 53-57). The insoluble core is the dispersed phase of the polymer dispersion (column 10, lines 31-32).

Similar to the Baker patent, the Li ‘067 patent does not teach or suggest inclusion of a polymerizable, crystallizable compound in the D material portion as recited by the claims. The Li ‘067 patent describes the steric stabilizer as comprising a crystallizable polymeric moiety. See column 4, lines 8-10, lines 28-30, and lines 57-62; column 6, lines 53-60.

The Office Action states the use of an alkyl chain having more than 13 carbon atoms “is taught by Li et al [5886067] Col. 8 lines 20-30.” The cited section of the Li ‘067 patent does generally describe types of polymerizable crystallizable compounds. However, this general discussion of the types of compounds does not teach or suggest inclusion of such compounds in the D material portion (the dispersed phase) as recited in the pending claims.

Applicants submit a *prima facie* case of obviousness is not established, since there is no suggestion or motivation to combine the teachings, and even if one of skill in the art were to combine the teachings of the cited references, he or she would not achieve the claimed invention.

The Baker patent describes phase change developers, a type of developer system that is present as one physical phase under storage conditions and transitions into another phase during

development. The Li '067 patent, in contrast, describes a liquid toner composition. One of skill in the art would have had no motivation to combine the reference teachings.

Even if one of skill in the art were to combine the teachings of the Baker patent and the Li '067 patent, he or she would not achieve the claimed invention, since the references, alone or in combination, do not teach or suggest a liquid toner composition comprising an amphipathic copolymer, wherein one or more of the D material portions comprises one or more polymerizable, crystallizable compounds.

Inclusion of the polymerizable, crystallizable compound in the D portion is not only technically surprising, but inclusion of the polymerizable, crystallizable compound in the D portion can provide surprising effects of the overall toner composition. Inclusion of the polymerizable, crystallizable compound in the D portion can provide an anti-blocking effect. This is surprising, since the D portion of the copolymer is not a crystallizable side chain and is therefore not as readily exposed to and solvated in the liquid carrier as the S portion of the copolymer. Further, it is unexpected that the S portion of the copolymer does not interfere with the anti-blocking benefit. It is also surprising that the polymerizable crystallizable compounds can be included in the D portion without adversely affecting properties of the amphipathic copolymer. The polymerizable crystallizable compounds tend to be soluble in nonaqueous liquid carriers; thus, inclusion of a soluble component in the otherwise dispersed D portion may be expected to adversely impact solubility characteristics of the copolymer, particularly by increasing solubility of the D portion to the point where a relatively high viscosity solution polymer, rather than a relatively low viscosity dispersion polymer (organosol), is obtained.

In light of the above, Applicants respectfully request reconsideration and withdrawal of the rejection.

Supplement Information Disclosure Statement

A Supplemental Disclosure Statement is included with this Response, to bring to the Examiner's attention references cited in related pending foreign applications. Consideration of the cited references is respectfully requested.

Conclusion

In view of the above remarks, it is respectfully submitted that all pending claims (1-13 and 16-31 are in condition for allowance. In the event that a phone conference between the Examiner and the Applicants' undersigned attorney would help resolve any issues in the application, the Examiner is invited to contact said attorney at (651) 275-9836.

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Respectfully Submitted,

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